

**State of Louisiana
Department of Health and Hospitals
Office of Public Health**

**Pandemic Influenza Guidance
Annex 1: Infectious Disease Epidemiology**



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I. Infectious Disease Epidemiology Overview

The Louisiana Department of Health and Hospitals (DHH) Office of Public Health (OPH) has created this Pandemic Influenza Guidance as a comprehensive identification, containment, and treatment plan to assist in the control of an outbreak of a novel influenza virus, such as the 2009 H1N1 influenza virus (“swine flu”) or an avian influenza. DHH OPH has followed, and will continue to follow, the international and national recommendations for identification, prophylaxis, and treatment of disease as well as consider the frameworks provided by the Centers for Disease Control and Prevention (CDC) for pandemic planning purposes and those recommended by the Occupational Safety and Health Administration (OSHA).

As there is little natural immunity to any new virus, it is recognized by DHH OPH that ongoing communications and updates to the health care community as well as the public are critical to the health of Louisiana. The recommendations that identify vulnerable populations and guidelines for treatment are also adopted by Louisiana, and the State remains in agreement with recommendations from such authorities as the Centers for Disease Control and Prevention (CDC).

Mission

The threat of pandemic influenza has caused both governmental and private sector agencies throughout the world to recognize the need for pandemic influenza planning as essential to preparing for a severe public health threat. Influenza surveillance requires global and national monitoring both for virus strain and disease activity. Timely identification of circulating or novel virus strains includes detection from animal (avian and other) sources as well as human cases. Monitoring influenza disease activity is important to facilitate resource planning, communication, intervention, and investigation. The essential requirement for effective state pandemic surveillance is a well-functioning inter-pandemic system that includes Louisiana’s participation in all aspects of influenza surveillance as outlined by the CDC. In the event of an influenza pandemic, surveillance systems shall be flexible and be rapidly adapted to respond to the challenges of a pandemic in order to assess and monitor the pertinent epidemiology of the pandemic influenza virus.

This Infectious Disease Epidemiology (IDEpi) Pandemic Influenza Annex is designed to explain virologic epidemiology procedures, review investigative requirements for epidemiological surveillance in humans, components of veterinary surveillance, and communications regarding IDEpi findings. In order to support a coordinated approach, steps have been taken to ensure that IDEpi pandemic influenza plans are consistent with Federal, State, and local guidance, plans, and policies.

II. Command and Control

National Incident Management

The DHH OPH Pandemic Influenza Guidance and this Guidance are compatible with the State of Louisiana Emergency Operations Plan. Further, they are compliant with National Response Framework, which requires the organization of response according to the National Incident Management System (NIMS). Operations are conducted using the Incident Command System.

The National Incident Management System was developed so that responders from different jurisdictions and disciplines can work together better to respond to natural and manmade disasters, including acts of terrorism. NIMS benefits include a unified approach to incident management; standard command and management structures; and emphasis on preparedness, mutual aid and resource management. While most emergency situations are handled locally, a major incident likely will warrant help from other jurisdictions, the State and the Federal Government. However, during a pandemic, additional assets may be limited or unavailable for mutual aid because they are already committed to service within their own communities. Regional coordination prior to the event may optimize the utilization of assets among multiple jurisdictions during an event.

IDEpi has clearly established authority under the State Epidemiologist in accordance with the State Health Officer. Drills and exercises, coordinated with public health and emergency management officials, should be used to validate pandemic influenza response plans and training programs. The department applies principles of the Incident Command System (ICS) and the National Incident Management System (NIMS). This authority should be maintained during an influenza pandemic. All Federal, State, local, tribal, and non-governmental personnel with a direct role in emergency management and response should be NIMS compliant.

Lead Agency

DHH OPH is the lead agency in the Pandemic Influenza Response within Louisiana. DHH works collaboratively with several State, local, and private agencies to provide trainings and other educational opportunities to ensure preparedness during a pandemic situation. Meetings and exercises also contribute to the success of State operations, and training programs ensure a variety of educational opportunities address the Pandemic Influenza Response topics. IDEpi has an integral part in leadership during a pandemic influenza event.

During an emergency or disaster, some administrative procedures may be suspended, relaxed, or made optional. Such action will be carefully considered, and the consequences should be projected realistically. Departures from usual guidelines will be stated in the Governor's State of Emergency Order and in emergency plans or guidelines.

Epidemiology of Pandemic Influenza

Influenza viruses are unique in their ability to cause infection in all age groups on a global scale. In addition to the highly transmissible nature of influenza, the virus can change its antigenic structure, resulting in novel sub-types that have never before affected humans. Major shifts in the viral sub-types are associated with influenza pandemics. The 1918 influenza pandemic caused more than 20 million deaths worldwide while the pandemics of 1957 and 1968 resulted in lower mortality rates due in part to antibiotic therapy for secondary bacterial infections and more effective supportive care. They both, however, were associated with high rates of morbidity and social disruption.

Pandemic influenza is a unique public health emergency and community disaster. It is considered a highly probable, if not inevitable, event but no one can predict when it will occur. There may be little warning, but most experts agree that there will be one to six months between identification of a novel virus and widespread outbreaks in the U.S. It is widely hypothesized that outbreaks will occur simultaneously throughout the U.S., and the effect on individual communities will last at least from six to eight weeks or more.

Certain conditions make an influenza pandemic more likely:

- A new influenza A virus arising from a major genetic change, i.e., an antigenic shift.
- A susceptible population with little or no immunity;
- A virus that is transmitted efficiently from person to person; and
- A virulent virus with the capacity to cause serious illness and death.

III. Planning Section

Preparedness

The State constantly seeks opportunities to work with local partners and assist with event-specific planning. As various aspects of this Guidance have been exercised or drilled in accordance with the Louisiana EOP and SNS requirements, this provides a strong community response and cooperation.

DHH OPH has identified persons to lead, plan, and oversee the training, exercise, and evaluation components of various preparedness programs. There are regional counterparts for each of these positions. The regions coordinate and receive guidance from the Louisiana DHH OPH Center for Community Preparedness. Coordination occurs within regions and parishes to provide guidance of upcoming and future training activities as well as event-specific training and exercise plans. The multi-year plan is Homeland Security Exercise Evaluation Process (HSEEP) compliant, and uses local, parish, and region-wide exercises to test knowledge post-training, and lessons learned are incorporated into the Action Request Form (ARF) or IAP form 308 through an ongoing review process.

Training

Pandemic preparedness training and exercises are coordinated by the Louisiana Department of Health and Hospitals with IDEpi as an active participant. In addition, IDEpi maintains its' own departmental specialized training requirements. A portion of pandemic response will be tested annually for IDEpi, usually through training or other epidemiological requirements of or for the Department.

All exercise and real world event after action reports shall be reviewed and all best practices shall be incorporated into future planning documents. Exercises allow IDEpi personnel, as well as personnel from other disciplines, to train and practice prevention, protection, response, and recovery capabilities in a realistic but risk-free environment. Exercises are also a valuable tool for assessing and improving performance, while demonstrating community resolve to prepare for major incidents.

The Homeland Security Exercise and Evaluation Program (HSEEP) is a capabilities and performance-based exercise program which provides a standardized policy, methodology, and terminology for exercise design, development, conduct, evaluation, and improvement planning. Exercises coordinated through DHH OPH Center for Community Preparedness will be HSEEP compliant in structure, inclusiveness, and documentation maintenance.

Tracking – Specialized Planning and Awareness

Improved situational awareness through information sharing (regarding both patients and resources) will enable better management of assets during a pandemic. This also provides for real time epidemiological analysis. Mechanisms for tracking influenza-like illness (ILI) patient encounters, emergency department visits, and hospital admissions as well as discharge of pandemic influenza patients is needed to monitor the progress and impact of the pandemic during non-pandemic or inter-pandemic phases. Weekly assessments of State influenza activity will be reported to CDC throughout the year - not only during influenza season.

State Level of Influenza Activity

Based on data collected, the Influenza Surveillance Team conducts weekly assessments of the overall influenza activity level in the state and reports this level to CDC through the State and Territorial Epidemiologists Report. Influenza activity has several reporting categories, which are defined as follows:

- **No Activity:** No laboratory-confirmed cases of influenza and no reported increase in the number of cases of ILI.
- **Sporadic:** Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.
- **Local:** Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in a single region of the state.
- **Regional:** Outbreaks of influenza or increases in ILI and recent laboratory confirmed influenza in at least two but less than half the regions of the state with recent laboratory evidence of influenza in those regions.
- **Widespread:** Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet) Activity Indicator Map

Data collected in ILINet are used to produce a measure of ILI activity by state. Activity levels are based on the percent of outpatient visits in a state due to ILI and are compared to the average percent of ILI visits that occur during spring and fall weeks with little or no influenza circulation. Activity levels range from minimal to high. State codes are calculated by CDC each week and confirmed by the Influenza Coordinator before publication.

These influenza activity assessments are the only state-level influenza surveillance data that CDC makes publicly available.

Active ILI Surveillance by the Sentinel Provider Network

Surveillance for outpatient visits for ILI is conducted via the Sentinel Provider Network (SPN), a collaborative effort among states, healthcare providers, and CDC. The Louisiana SPN has 61

private providers, or 1 / 70,000 population, that regularly contribute weekly the total number of patient visits as well as number of patient with ILI; this exceeds the recommended 1 site per 250,000 population by CDC include physicians, hospitals and urgent care facilities. As previously noted this data is collected year-round.

Additional efforts related to the SPN include:

- Recruitment for new sites, particularly from parts of the state or risk groups that are under-represented.
- Facilitating reporting of data directly to CDC and assists with resolving any difficulties reporting.
- Providing ongoing feedback to health care providers in the form of weekly email reports.
- Encouraging sentinel providers to actively submit ILI specimens collected from patients at the beginning, middle, and end of the season to the state laboratory for testing at no charge to the provider.

Hospital Surveillance

The Early Aberration Reporting System (EARS) has been historically used in seven Louisiana hospital emergency rooms in three regions of the state. ILI is one of the six syndromes tracked through EARS. The syndromic data captured through EARS is incorporated into the Influenza Sentinel Surveillance program. Although based on chief complaint data, the system can capture ILI data based on the text strings that are associated with the syndrome. To capture the patient as a case of ILI, the physician does not have to list “influenza” as the diagnosis.

Louisiana Early Event Detection System (LEEDS) is being implemented and replacing EARS. LEEDS will track 35 syndromes across four categories based on symptoms that are pre-defined text strings. This system will allow expansion of emergency department and urgent care ILI surveillance to many more hospitals throughout the state.

Reports of individual cases of severe illness and death that are hospital-based will be investigated by personnel in the Infectious Disease Epidemiology Section. Demographic case information and clinical history will be collected in accordance with current IDEpi procedures.

Hospital Infection Preventionists (IPs) report clusters of illnesses, including upper/lower respiratory diseases as mandated by the Sanitary Code, which will also be investigated. In-depth epidemiologic investigations are carried out on hospitalized patients who have unusual clinical syndromes or severe morbidity associated with influenza.

The Louisiana Hospital Inpatient Discharge Database (LAHIDD) will be used to monitor influenza hospitalization data for trends and suspicious illness/symptoms that indicate an increase in ILI.

Mortality Monitoring

Influenza associated mortality is a reportable condition in Louisiana. The Influenza Surveillance Coordinator will conduct passive surveillance for influenza associated mortality. Within the next year, Louisiana will be implementing a system for electronic death certificates which will allow more rapid reporting of influenza associated mortality. Pediatric associated influenza mortality will continue to be reported to CDC using the Secure Data Network (SDN). The Infectious Disease Reporting Information System (IDRIS) will be used to report influenza hospitalizations. The Louisiana Hospital Inpatient Discharge Database (LAHIDD) will be used to monitor influenza hospitalization data.

Investigation of ILI Clusters

Long-term care facilities, children's day care facilities, schools, and other institutional care facilities report outbreaks of diseases as mandated by the Sanitary code. Clusters of disease that may be reported include gastro-enteric diseases, food borne outbreaks and upper/lower respiratory tract diseases including ILI.

Investigations of reported ILI clusters at long term care facilities and other institutions will be conducted by the Infectious Disease Epidemiology Section in accordance with the CDC Guidelines for Pneumonia/Influenza Outbreaks or Clusters in Long Term Care Facilities.

Documentation

Documentation of weekly or other routine reporting for IDEpi methodologies is tracked as previously noted. Additional training specific to job-related duties is tracked through DHH Workforce Management, inclusive of any certifications or licensure held by IDEpi employees.

IV. Operations Section

Biosafety Procedures

Biosafety conditions for handling patients and/or their belongings, which may be infected or contaminated with a novel or pandemic influenza virus, are more stringent than those needed for routine patient care. Biosafety guidelines for handling or processing specimens or isolates of novel influenza strains are provided in the US DHHS national Pandemic Influenza Plan.

Potential Contamination from Patient Contact

The ability to limit transmission of pandemic influenza in healthcare settings will rely heavily on the appropriate and thorough application of infection control measures. The CDC makes numerous additional recommendations regarding infection control in the healthcare setting in Supplement 4 of the *US Department of Health and Human Services Pandemic Influenza Plan*.

The Supplement states:

While it is commonly accepted that influenza transmission requires close contact—via exposure to large droplets (droplet transmission), direct contact (contact transmission), or near-range exposure to aerosols (airborne transmission)—the relative clinical importance of each of these modes of transmission is not known... Given some uncertainty about the characteristics of a new pandemic strain, all aspects of preparedness planning for pandemic influenza must allow for flexibility and real-time decision-making that take new information into account as the situation unfolds. The specific characteristics of a new pandemic virus—virulence, transmissibility, initial geographic distribution, clinical manifestation, risk to different age groups and subpopulations, and drug susceptibility—will remain unknown until the pandemic gets underway. If the new virus is unusual in any of these respects, HHS and its partners will provide updated infection control guidance.

Potential Contamination from Environmental Contact

Some microbes are infectious at very low doses and can survive for hours to weeks on nonporous surfaces, such as countertops and telephone headpieces. A number of viruses, including influenza A virus can be found in oral secretions of those infected and survive 2-24 hours on hard surfaces. A University of Arizona study using an invisible fluorescent tracer showed that artificial contamination from outside surfaces (e.g. such as doorknobs, telephones, faucets, and copier buttons) was transferred to 86% of 35 exposed individual's hands. In addition, 82% of the 35 participants subsequently tracked the contaminant to their home or personal belongings. The study identified phones, desktops, and keyboards among the top five "dirtiest" work surfaces. Viruses detected using such a tracer method may no longer be viable (able to infect a human with disease); however, the study illustrates the potential transfer rates of human pathogens.

Precautions as recommended by the CDC will be utilized incorporated into recommendations by IDEpi.

Concept of Operations: Human Surveillance

In order to identify and characterize circulating strains of the influenza viruses, which in turn will help inform annual vaccine formulation and to characterize strains with pandemic potential at the national level, eight laboratories in Louisiana are part of the National Respiratory and Enteric Virus Surveillance System (NREVSS). NREVSS laboratories report the total number of respiratory specimens tested and the number positive for influenza types A and B each week to CDC. Some of the influenza viruses collected by collaborating laboratories are sent to CDC for further characterization, including gene sequencing, antiviral resistance testing and antigenic determination. The Louisiana Office of Public Health Laboratory is capable of conducting real time reverse transcriptase polymerase chain reaction (RT-PCR) for influenza and differentiating between H1, H3, H5, B, and novel H1N1. More detailed information about laboratory operations during the various phases of the pandemic can be found in the Pandemic Influenza Guidance, Annex 2: Laboratory

The coordination of epidemiologic activities for seasonal and pandemic influenza is performed by the Influenza Surveillance Team that is comprised of the State Epidemiologist, Infectious Disease Epidemiologist Manager, Public Health Veterinarian, Bioterrorism Surveillance and Epidemiology Response Coordinator, two Infectious Disease Epidemiologists, and an administrative assistant. The Influenza Surveillance Team meets regularly to plan, revise, and continually enhance the influenza surveillance program. Ongoing duties of the Influenza Surveillance Team include:

- Strongly encouraging current sentinel sites to participate in year-round reporting
- Distributing an electronic copy of a summary of flu activity in Louisiana to sentinel providers on a weekly basis
- Distributing influenza viral testing kits free of charge to sentinel sites throughout the year
- Encouraging sentinel providers to submit specimens for influenza virus identification and sub-typing
- Monitoring sentinel provider data weekly for completeness and errors and follows up on unusual reports on a weekly basis
- Conducting site-visits to sentinel sites to provide continued education as well as to facilitate site's weekly ILI reporting
- Evaluating, improving and updating the state influenza website
- Investigating and recording clusters of influenza-like illness (ILI) in institutions, including long term care facilities, as well as in the community
- Interfacing with external providers to facilitate syndromic surveillance
- Conducting weekly assessments during traditional flu season of overall flu activity in the state for the Activity Level Assessment for the State and Territorial Epidemiologists report and submit that data to CDC each by noon on Tuesday each week
- Confirming the ILINet Activity code for the Activity Indicator Map
- Contributing to State pandemic planning activities

- Maintaining a strong working relationship with the LA DHH OPH Laboratory
- Summarizing current flu seasons and compare to previous years in annual report
- Maintaining the Influenza Surveillance Database

Investigation of ILI Clusters

Regional epidemiologists, Disease Surveillance Specialists, Disease Investigation Specialists and Immunization Consultants will participate in the investigations, collect laboratory results, and complete investigation forms.

Clusters of influenza-like illness will be documented in “Epi-Stories”, a web based system used to track infectious cases of importance, clusters and outbreaks. These will include numbers of newly isolated and quarantined cases. These Epi-Stories will then be summarized in an outbreak investigation database.

Cases of severe illness and deaths associated with influenza will be reviewed. Demographics (particularly age), occupational, and residential patterns will be evaluated. Any unusual patterns will be investigated. A special focus will be placed on pediatric influenza.

As long as it is possible, contact investigations will be carried out around confirmed cases of novel influenza. Identification of contacts will be based on epidemiologic criteria. Priority will be given for the contacts at high risk of exposure to droplets, with a long time common exposure in enclosed areas. A second tier will be constituted by those exposed to by contact with infected cases or contaminated fomites. Clusters will be defined as 3 cases with a common exposure such as attending the same school or participating in a common extracurricular activity.

Descriptive epidemiology will be available from information collected on confirmed cases.

Attack rates, the proportion of individuals who are exposed to an infectious agent who become clinically ill, for investigated clusters will be calculated when possible. For example, for an outbreak associated with a meeting where 60 people were in attendance and 12 of them became ill – the attack rate for that cluster investigation would be 18%. Household contacts of confirmed cases will be monitored for ILI symptoms to obtain an attack rate among household contacts. If 80 of 382 household contacts for 95 cases become sick, this represents an attack rate of 21%.

Virologic Surveillance

The CDC laboratories perform the characterization of strains for specimens submitted by Louisiana, as detailed in the Laboratory Guidance for Pandemic Influenza.

Specimens may be submitted at the following stages:

- Increases in ILI are detected by sentinel and non-sentinel sites
- Clinical virology laboratories submit influenza virus isolates for viral subtyping
- Outbreaks/Clusters are investigated

- Control of transmission is evaluated

During a declared pandemic, the virologic surveillance system is enhanced. Novel influenza strains might include avian influenza viruses that can infect humans, other animal influenza viruses, or new or re-emergent human influenza strains that cause outbreaks of human disease.

The specific recommendations will depend on the epidemiology of the virus and the clinical characteristics of the human cases as they are known at the time, and will most likely focus on severely ill, hospitalized, or ambulatory patients who meet certain epidemiologic and clinical criteria.

Specimens may be requested from patients who present with severe ILI and one of the following:

- Travel history to a region where a novel strain of influenza has been identified;
- History of influenza vaccine within the previous year;
- Unusually severe symptoms of ILI regardless of their travel history;
- Suspected to be part of an ILI cluster.

Sentinel providers may conduct enhanced virologic surveillance by submitting specimens on all patients presenting with ILI to help detect the introduction of the virus in the state. The most intense testing will be necessary during the early stages of a pandemic, when detecting the introduction of the virus into a State or community is the primary goal. Once the virus has been identified throughout the state, diagnosis of individual cases becomes less important. Most cases will be diagnosed clinically. The level of testing can be decreased to a level more like that of a non-pandemic influenza season and the role of the laboratory can be limited to identifying new strains that may appear. As part of the effort to monitor antigenic and genetic changes and changes in antiviral resistance patterns in the pandemic virus, the DHH OPH Laboratory will continue to forward a subset of positive specimens to CDC. Dependant on pandemic and epidemiological conditions, ILI testing of all specimens would shift to a defined number of samples collected per week per site.

Hospital Surveillance

As described earlier in this document, EARS or LEEDS may be quickly adapted to track newly created syndromes. For example, if pneumonia becomes a priority based on the epidemiology of the novel virus, symptoms can be used to build a syndrome and tracking becomes automatic.

Enhanced surveillance using the syndromic surveillance systems can be accomplished by monitoring daily ILI data. Enhanced surveillance may also include refining or adding additional chief complaints to the syndromes based on epidemiologic criteria of the novel virus. The syndromic surveillance systems will be implemented in areas (other than emergency departments) that admit patients to the hospital. Thus, the syndromic surveillance system will capture the total number of visits and the proportion due to ILI without intervention from hospital staff. Thus, data collected from each participating hospital will include information on both patients evaluated in the ER (treated and released) and patients admitted due to ILI.

In case of a public health emergency such as novel influenza, it may be necessary to create one or several new reportable conditions, post case definitions, collect detailed information on the case, list the contacts, and even collect information on the contacts. Creation of a new reportable condition and associated case detail information can be accomplished in a matter of minutes using the Infectious Disease Reporting Information System (IDRIS). In a novel influenza situation, the following measures will most likely include:

- Create new conditions: Novel Influenza case, Contact of a Novel Influenza case
- Create a Laboratory Data Entry screen to document laboratory tests performed on Novel Influenza cases and contacts
- Use a Supplementary Case Investigation Form to document:
 - Changes in case status
 - Isolation and/or quarantine
 - Monitoring of suspect case
 - History of hospitalization
 - Preventive or curative treatment
 - Complications
 - Deaths

The total number of Novel Influenza hospitalizations due to influenza will be calculated for each hospital and aggregates will be completed by geographic areas.

Surveillance in Humans

The Influenza Surveillance Team will review and implement contingency strategies for enhancing influenza surveillance if efficient person-to-person transmission of a novel virus is confirmed. The number of epidemiologists working on influenza will increase to meet the need. Staff within the Infectious Disease Epidemiology Section including Regional Epidemiologists and Disease Surveillance Specialists will assist in surveillance efforts as needed.

Activities will focus on case based surveillance to detect suspect cases of individual ILI that meet a specific set of criteria, established by CDC, confirm whether they are due to the novel pandemic strain of influenza virus, and take appropriate control measures to limit the spread of infection.

The specific recommendations will depend on the epidemiology of the virus and the clinical characteristics of the human cases as they are known at the time, and will most likely focus on the following:

- Clinical characteristics such as severity of illness, hospitalization, or ambulatory patients who meet certain epidemiologic and clinical criteria;
- Travel or residence history in area known to be a focus of pandemic influenza;
- Exposure to affected population groups; and
- ILI in spite of adequate prior immunization.

CDC will notify DHH OPH of current recommendations via the Health Alert Network (HAN) and other CDC tools for communication, such as Epidemic Information Exchange, EpiX. DHH OPH will further distribute the recommendations to healthcare providers as well as other interest groups, and will be responsible for receiving initial reports of suspected cases in their jurisdictions.

Suspected and confirmed cases of novel influenza will be reported to CDC by IDEpi at the time intervals specified in enhanced surveillance protocols. During the pandemic alert period it is likely that all cases will be reported to CDC in a line list.

The following is an example of protocol recommendations that may be issued for an Epidemiological investigation for a novel flu strain:

Enhanced US Surveillance and diagnostic evaluation to identify cases of human infection with novel influenza A (H5N1)

Enhanced surveillance efforts by health departments, hospitals, and clinicians are needed to identify patients at increased risk for influenza A (H5N1).

Interim recommendations are as follows:

- Testing for novel influenza A (H5N1) is indicated for **hospitalized** patients with:
- Radiographically confirmed pneumonia, acute respiratory distress syndrome (ARDS), or other severe respiratory illness for which an alternative diagnosis has not been established, **and**
- **History of travel within 10 days** of symptom onset to a country with documented novel influenza A (H5N1) infections in poultry and/or humans.

OR

- Testing for novel influenza A (H5N1) should be considered on a case-by-case basis in consultation with state health department for **hospitalized or ambulatory** patients with:
- Documented temperature of $>100.4^{\circ}\text{F}$ ($>38^{\circ}\text{C}$); **and**
- One or more of the following: cough, sore throat, or shortness of breath; **and**
- **History of contact with poultry** (e.g., visited a poultry farm, a household raising poultry, or a bird market) **or a known or suspected human case of influenza A (H5N1) in an H5N1-affected country** within 10 days prior to onset of symptoms.

Additionally, the following will be performed by Infectious Disease Epidemiology for the Sentinel Provider Network:

- Immediately recruit new sites for geographic areas that are under-represented.
- Initiate direct reporting of daily ILI data to CDC for a subset of providers. All other providers will continue to report data weekly.
- Continue to provide ongoing feedback to health care providers in the form of weekly email reports.
- Request that all providers submit specimens on any patient that presents with ILI.
- Provide supplies and transportation for ILI specimens.

The focus of surveillance during the initial phase of a pandemic will be on detecting individual cases with specific characteristics that indicate likely infection by a new strain. The laboratory surveillance systems will need to have the sensitivity to detect and characterize circulating

strains of influenza virus as well as early human cases of a novel virus in the state. The epidemiologic surveillance is focused on detection of unusual cases and identifying new strains. The focus of disease control is on stamping out transmission around individual cases.

Epidemiologic surveillance will shift to a Community Based Model as the pandemic progresses. Epidemiologic surveillance will focus on:

- Identification of population groups at risk of transmitting infections;
- Quantification of health care needs, severe morbidity; and
- Quantification of mortality.

Surveillance activities will need to assimilate large amounts of data to determine age-specific attack rates, morbidity, and mortality. The focus of disease control will shift to identify best community preventive actions and direct health care resources towards the population in greatest need.

Suspected and confirmed cases of pandemic influenza will be reported to CDC by IDEpi at the time intervals specified in enhanced surveillance protocols. During the pandemic period, it is likely that data will be transferred in an aggregate report.

Prior to an Immunization campaign, it is expected that vaccines will be in short supply and priorities will be established. Epidemiologic surveillance will provide data useful to identify priorities in immunization strategies. Immunization programs may aim at immunizing groups of high transmitters or immunizing groups at high risk of severe morbidity and mortality (which may be the elderly or a younger population group). In deciding which groups will be given the vaccine, the focus may be on saving lives or on saving years of life.

During the mass immunization phase, epidemiologic surveillance will be geared at evaluating the response to immunization and virologic surveillance at identifying any new strains that affect properly immunized individuals.

During recovery, epidemiologic surveillance aims at detecting continuous foci of infection.

Surveillance activities will be carried out on a regional basis by Regional Epidemiologists and Regional Disease Surveillance Specialists with support from Disease Investigation Specialists from the Sexually Transmitted Disease and Tuberculosis Control Programs. All data will be consolidated in the Infectious Disease Epidemiology Section.

Mortality Monitoring

Influenza-associated mortality is a Class A reportable disease in Louisiana, requiring a report by telephone immediately to Infectious Disease Epidemiology. Pediatric associated influenza mortality continues to be reported to CDC using the Secure Data Network (SDN). The Infectious Disease Reporting Information System (IDRIS) is used to create supplementary reporting forms for the reporting of pneumonia and influenza deaths.

Hospitals and physicians will be required to report influenza deaths through IDRIS until the time a Statewide Electronic Death Reporting System is in place. IDRIS requires a minimum of information so that reporting of influenza deaths would not be a burden.

Death certificate information will be checked against the Immunization Registry to identify fatalities that occurred among immunized individuals and delays between immunization and death.

Case Fatality Rate: From the number of admissions for ILI and the number of deceased, it will be possible to estimate the case fatality rate. This rate will be an estimate since the denominator will be constituted by ILI and not confirmed influenza cases. It is expected that during a severe pandemic, cases will be diagnosed on clinical grounds rather than laboratory testing. If the pandemic is light, there will be an attempt made to obtain the total number of lab confirmed cases pandemic influenza.

Concept of Operations: Veterinary Surveillance

A pandemic influenza virus strain is likely to arise from re-assortment of animal and human influenza viruses. Therefore, coordination of surveillance with the U.S. Department of Agriculture (USDA) is critical, given USDA's responsibility to conduct influenza surveillance in domestic animals. The LA Department of Agriculture & Forestry (LDAF), Office of Animal Health Services State Veterinarian in close association with USDA Animal and Plant Health Inspection Service (APHIS) Veterinary Services (VS) is generally responsible for the development and implementation of surveillance programs that are consistent with the size and complexity of the resident commercial and backyard poultry industry. Establishing communication links between USDA APHIS VS, LDAF and LA OPH regarding avian and swine influenza surveillance is necessary to exchange information as a means to implement early identification and intervention measures. The USDA APHIS VS is monitoring for the presence of avian influenza viruses that may pose a threat to commercial poultry.

Testing for influenza in poultry and swine is conducted by the LA Department of Agriculture & Forestry and the respective industries. The requirement for the reporting of contagious (animal) diseases follows the protocol described in Title 7 XXI: §121. The plenary power to deal with contagious diseases of animals is within Title 3: chapter 16, Part 1: §2095. The State Veterinarian, as an employee and executive secretary of the Livestock Sanitary Board, has plenary power to deal with any contagious disease involving animals.

If an animal owner, parish agent, or veterinarian suspects a disease, they are required to report it within 24 hours by several mechanisms (phone, fax, email, etc). A list of diseases, including Highly Pathogenic Avian Influenza (High Path AI), is included in Title 7 XXI: §121. All public practice veterinarians, including state and federal, are trained at the approved federal biocontainment laboratory to be foreign animal disease diagnosticians. They are trained to collect and submit samples to the National Veterinary Medical Disease Laboratory in Ames, IA if there is a high index of suspicion. If the sample is determined to be positive, the USDA APHIS VS area veterinarian in charge (AVIC) and the State Veterinarian would begin a unified command system. Quarantine measures would have been implemented and enhanced

surveillance with testing would simultaneously occur. The USDA would be the lead agency in collaboration with the State in the operational management for the public health response to novel viruses identified in the animal population.

The Louisiana State Public Health Veterinarian is an integral part of the Influenza Surveillance Team. This position serves as the link between Infectious Disease Epidemiology and external partners conducting Veterinary Surveillance for Influenza.

Continuity of Operations for IDEpi

The *National Strategy for Pandemic Influenza: Implementation Plan* references the following Continuity of Operations (COOP) program elements:

1. Planning
2. Essential functions
3. Delegation of authority
4. Succession planning
5. Alternate physical facilities
6. Effective communications
7. Business record-keeping
8. Human capital
9. Training
10. Devolution
11. Reconstitution

The Department of Homeland Security's *Pandemic Influenza Preparedness, Response, and Recovery Guide for Critical Infrastructure and Key Resources* was developed to assist the private sector in addressing business continuity during a pandemic. The framework, Continuity of Operations Plan-Essential (COP-E), supports DHS's national-level Critical Infrastructure/Key Resources (CI/KR) preparedness and protection mission and urges private sector business planners to expand upon their traditional notions of business continuity. The Guide states that "Eighty-five percent of critical infrastructure resources reside in the private sector, which generally lacks individual and system-wide business continuity plans specifically for catastrophic health emergencies such as a pandemic influenza".

Deceleration and Resolution (Demobilization)

During the Deceleration Interval, rates of pandemic infection decline. Mitigation activities began to be lifted and recovery begins. If medical countermeasures remain available, providing medication and supplies for treatment will continue. IDEpi continues its Operations throughout the deceleration process.

Documentation

Reporting Requirements

The mechanisms and processes for reporting and documentation are handled by line of surveillance, as mentioned earlier in this section.

V. Logistics Section

IDEpi Freedom-of-Movement During Pandemics

Ensuring epidemiological personnel are able to move freely, even though there may be travel restrictions, is essential to the performance of their duties. State pandemic influenza plans should, in coordination with public health, emergency management, and law enforcement agencies, identify mechanisms to ensure freedom of movement of epidemiological assets (vehicles, personnel, etc.) when faced with restricted travel laws, isolation/quarantine or security measures.

As referenced in the Louisiana Pandemic Influenza Plan, a jurisdiction's chief executive may have the authority, depending upon State and local law, to order quarantine in coordination with the local health authority. Quarantine has the potential to impact the transportation of patients by ambulance, as well as the ability of IDEpi personnel to travel from their homes to their places of employment. State and local planners must be cognizant of this possibility and include processes in their pandemic influenza plans to allow IDEpi to maintain continuity of operations during these extraordinary circumstances.

Contingency for Mass Fatality

While not traditionally part of their day-to-day duties, IDEpi personnel may be called upon to assist with fatality management during an influenza pandemic or other public health emergency. An influenza pandemic is expected to result in an increased number of deaths both in and out of medical facilities. Existing fatality management systems in communities will require an increased capacity and capability to manage deaths resulting from a pandemic. DHH is the lead agency for mass fatality management planning.

Deaths of persons at home or away from healthcare facilities fall under the jurisdiction and surveillance of medico-legal death investigators. Medical Examiners/Coroners have State statutory authority to investigate deaths that are sudden, suspicious, violent, unattended, or unexplained; therefore, these investigators have a role in recognizing and reporting fatal outbreaks as part of the larger public health system and can be instrumental in developing relevant local protocols that help mitigate the burden that case fatalities can place on the system. Communications with Medical Examiners/Coroners by IDEpi personnel are listed in the Public Information section of this guidance.

IDEpi should collaborate with appropriate State authorities to identify roles, policies, and procedures for handling fatalities during a pandemic, utilizing their expertise in disease management to provide recommendations for containment. IDEpi should coordinate with the State and local medical examiner/coroner to determine proper handling of human remains during an influenza pandemic.

VI. Security Section

Overview

The Louisiana DHH OPH Infectious Disease Section has security as part of the state office building.

VII. Public Information Section

Overview

During a pandemic, the medical community must have awareness regarding ongoing epidemiological analysis and community-wide interventions being recommended by public health leaders. Likewise, the public health community must have situational awareness of the evolution of disease that can come from collaboration with 911, EMS, emergency departments and other acute care and outpatient settings where patients seek medical care. The pre-pandemic planning period presents an opportunity to establish and test these relationships.

The Centers for Disease Control and Prevention is a trusted source of important and timely information concerning actual or potential public health emergencies. For example, the EpiX system enables the CDC to rapidly disseminate alerts about evidence of suspected pandemic influenza in the United States.

Establishing a dynamic, coordinated and sustainable process will assure that partners are able to rapidly incorporate updated disease and treatment information on pandemic influenza and other emerging public health threats into their practices. Internal (to the State Departments) and external communications mechanisms are more thoroughly described in the Communications Plan as supplied and amended by the DHH Bureau of Media and Communications, another Annex to the DHH OPH Pandemic Influenza Guidance document.

Information Dissemination

The public will respond favorably to messages which are coordinated and consistent between authorities. Communications are coordinated with DHH Bureau of Media and Communications.

The language, timing, and detail of key messages will depend on a number of factors, including demographics and group psychological profiles of intended audiences, available or preferred media, and urgency. The US Department of Health and Human Services will provide communications materials for states throughout all pandemic phases. Many of these resources will be made available at appropriate times on www.pandemicflu.gov website as well as www.fighttheflu.com. Others will be disseminated by using the Health Alert Network (HAN), Epidemic Information Exchange (Epi-X), and other resources for health professionals.

Communication: Health Care Providers

A robust two-way communication with Health Care Providers (HCP) is essential to ensure the success of the pandemic influenza response, containment, and mitigation program.

Surveillance, testing, and reporting recommendations will change according to the pandemic phases as described previously in this Guidance. The following methods are routinely used to communicate with HCP for influenza and other public health issues:

- Blast fax to hospitals, large medical groups, and selected private practitioners.
- E-mail to all medical practitioners from a list obtained from the Board of Medical examiners (annually updated).
- E-mail to all Infection Control Practitioners (ICP) and Infectious Disease Specialists in the state. These lists are updated regularly.
- Posting information on the DHH public website.
- Posting on the OPH portal. Hospitals and large medical groups are already reporting through IDRIS, which is a web based program. To access this program the users go through the OPH portal with single sign on. On the portal webpage restricted to HCP, technical information is displayed in greater detail than on the public website.
- The Laboratory Information Management System (LIMS) allows ICP to electronically submit information on the samples submitted and to receive results (already implemented in a few pilot parishes).
- The OPH Infectious Disease Epidemiology Section has a 24-hour number (1-800-256-2748) that is well known by most HCPs. Calls are answered by an epidemiologist with a 24-hour access to epidemiologic, preventive care and laboratory experts. For example this number is used by Emergency Departments and physicians to obtain counseling on rabies prophylaxis, exposure to bodily fluids and information on laboratory testing available from the DHH OPH Lab as well as by school nurses to report outbreaks or requests for exclusion recommendations.

Communication: Health Departments

In Louisiana, the state system covers all the parish health units throughout the State except for some programs specific in the City of New Orleans and the Parish of Plaquemine. The State is divided into nine public health regions. Infectious Disease Epidemiology already communicates regularly with Regional Epidemiologists and Disease Surveillance Specialists for disease surveillance and outbreaks. Regional Administrators and Medical Directors are available as needed. The regional office will ensure the communication down to the level of the Parish Health Units.

Hospitals may contact the Health Department either through their Regional Office phone contacts (the Disease Surveillance Specialists who are in daily communication with the Hospital ICPs) or through reporting a case with questions through the Portal and the Infectious Disease Reporting System or through 1-800-256-2748, staffed by a Central Office Epidemiologist.

Communication: Coroners and Medical Examiners

The Bioterrorism Surveillance Epidemiologic Response Coordinator maintains the coordination programs with coroners and medical examiners. A Coroners Education Program was designed to meet the dual needs of increasing awareness and knowledge among coroners and increasing their utilization of the surveillance system. The program demonstrated that coroners could play an active role in disease surveillance and early bioterrorism detection. Including coroners in surveillance activities strengthens the public health infrastructure and serves the public good. This program was started in 2002 and continues to this day. The communication is maintained by phone, e-mails, and newsletter.

Communications: Animal Care Community

The State Public Health Veterinarian maintains at-least annual, though often more frequent, contact with the Louisiana Department of Agriculture State Veterinarian and its Deputy, the Department of Wildlife & Fisheries, the Louisiana State University School of Veterinary Medicine and its laboratory, Veterinarians from the US Department of Agriculture, and the Louisiana State Veterinary Association. All of the listed entities have access to the Veterinary Surveillance page of the OPH website.

Communications: Other Stakeholders

The Vital Statistics Office is part of DHH OPH. Communications between the Infectious Disease Epidemiology Section and the Center for Records and Statistics occurs on a monthly or often more frequent basis during routine operations. During incidents/events communication occurs more often.

The Emergency Support Function 8 (Public Health and Medical Services) position has permanent representation at the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) Emergency Operating Center (EOC) at all times – during routine business hours as well as all emergency activations.

Limitations of Public Information

Most health surveillance efforts are not focused on specific patients, but are looking at trends and patterns in the aggregate. However, there may be cases when public health officials are called upon to investigate specific cases which would require receiving and working with Protected Health Information (PHI), as that term is defined by the Privacy Rule promulgated pursuant to the Health Insurance Portability and Accountability Act (HIPAA) of 1996. The HIPAA Privacy Rule is the Federal law governing the use and disclosure of PHI by “covered entities” (certain health care providers, health plans and health care clearinghouses).

Some government agencies are “covered entities” and some are not. State law may also address such use and disclosure, and the HIPAA Privacy Rule does not preempt contrary state laws that provide greater privacy protection. The Privacy Rule does not cover the use and disclosure of health information by non-covered entities. Moreover, the Privacy Rule permits “covered entities” to disclose PHI to public health authorities to prevent or control disease, injury or disability (including the conduct of public health surveillance.)

VIII. Supporting Documentation

Table 1: Stages and Triggers for Pandemic Influenza Response

WHO Phase	CDC Stage	Influenza Interval	Louisiana Trigger	National Trigger
1: Low risk of human cases	0: New Domestic Animal Outbreak in At-Risk Country	Investigation of Novel Influenza A Infection in Animals and Humans	Identification of animal case of influenza A subtypes with potential implications for human health within the State	Identification of animal case of influenza A subtypes with potential implications for human health anywhere in the world
2: Higher risk of human cases				
3: No or very limited human-human transmission	1: Suspected Human Outbreak Overseas		Identification of human case of potential novel influenza A infection within Louisiana	Identification of human case of potential novel influenza A infection anywhere in the world
4: Evidence of increased human-human transmission	2: Confirmed Human Outbreak Overseas	Recognition of Pandemic Virus	Confirmation of human cases of novel influenza A and demonstration of efficient and sustained human-to-human transmission within Louisiana	Confirmation of human cases of novel influenza A and demonstration of efficient and sustained human-to-human transmission anywhere in the world
5: Evidence of significant human-human transmission				
6: Efficient and sustained human-human transmission	3: Widespread Human Outbreaks in Multiple Locations Overseas			
	4: First Human Case in North America	Initiation of Pandemic Wave	Laboratory-confirmed case of defined pandemic influenza detected within Louisiana	Laboratory-confirmed case of defined pandemic influenza detected within the US
	5: Spread Throughout United States	Acceleration of Pandemic Wave	Two or more laboratory-confirmed cases in Louisiana that are not epi linked to any previous case; or, Increasing cases exceed	At least one State in five of the ten FEMA/HHS regions have met the Acceleration criteria

			resources for case-based control measures	
		Peak/Established Transmission During Pandemic Wave	<p>>10% of specimens from patients with influenza-like illness submitted to the State public health laboratory are positive for the pandemic strain during a seven day period; or,</p> <p>“Regional” pandemic influenza activity is reported by the LA DHH OPH using CDC surveillance criteria, or</p> <p>The health care system surge capacity has been exceeded</p>	The majority of States have met the Peak/Established Transmission criteria (includes States that have transitioned into the Deceleration Interval)
		Deceleration of Pandemic Wave	<p><10% of specimens from patients with influenza-like illness submitted to the State public health lab are positive for the pandemic strain for at least two consecutive weeks; or,</p> <p>The health care system capacity is below surge capacity</p>	The majority of States have met the Deceleration criteria (includes States that have transitioned into the Resolution Interval)
	6: Recovery	Resolution of Pandemic Wave	<p>Laboratory-confirmed pandemic influenza cases are occurring sporadically; or,</p> <p>The healthcare system capacity is approaching pre-pandemic levels</p>	The majority of States have met the Resolution criteria

